STANDARD FORM NO. 64

SECRET

Office Memorandum UNITED STATES GOVERNMENT

HANDLE VIA TALENT CONTROL SYSTEM ONLY

TCS-1480-57
HTA-TI-13-57

TO : Chief, HTAUTOMAT

DATE: 16 May 1957

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FROM : Chief, Technical Intelligence Branch

SUBJECT: Calibration of HTA Camera Systems

1. Investigations by members of the Technical Intelligence Branch have determined that a fair amount of information is available from [redacted] regarding camera calibration. This information is in the process of being collected at present. 25X1A

2. In spite of the camera data mentioned above, there is much additional information required about the camera systems in order to take full advantage of the extensive exploitation equipment being procured for the Technical Intelligence Branch, and to bring the caliber of the HTA collection effort to the level needed for metrical analysis, rather than just for reconnaissance-type photo-interpretation.

Additional data, which is presently unobtainable, pertains to the camera angular interrelationships, and include such data as skew angles, locking angles, and general interior orientation information.

The situation is made more difficult at present because even though some individual camera data is known, cameras and mounts are used interchangably. Therefore, no single set of data can be applied to a particular mission.

25X1D 3. Recommendations:

[redacted]

This would make available, for every separate mission, the means for determining the particular geometry needed for any photo of the mission, regardless of the combination of cameras, mounts, or aircraft used. Further, the data would be an integral part of the negatives of the mission proper.

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The advantages of such a mission calibration are obvious. For metrical analysis of any single photo or stereo pair, in a given mission, the metrical history of the cameras would be available.

This mission calibration system can be tied into ideas presently under consideration for determining aircraft pitch and roll by analysis of tracker film and subsequent correlation with large camera exposures to give aircraft tip and tilt conditions for the length of the mission.

4. To provide such photogrammetric control ranges at each base will require some effort by the Technical Intelligence Branch with the field assistance of any available survey personnel. The physical equipment needed for such work is already being procured and will be aboard shortly. The actual field work necessary can be shortened, in some locations, by the use of existing control data, where available. Thus, the actual survey work for many control points will be merely an identification and/or flagging process. There would be, necessarily, some actual ground survey work involved, such as locating by angle and distance measurement the corners of airfield runways.

Such work should be undertaken, if the plan is deemed advisable, at the earliest possible convenience, in order to avoid a greater backlog of missions for which metrical data is irrecoverable.

[redacted]

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